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भाग 8 उड़ान वाहक (खुरचनी वाहक)
(दूसरा पुनरीक्षण)

**Code of Recommended Practice for
Conveyor Safety**
**Part 8 Flight Conveyor
(Scraper Conveyor)**
(Second Revision)

ICS 53.040.10

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FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards on recommendation of the Continuous Bulk Conveying, Elevating, Hoisting Aerial Ropeways and Related Equipment Sectional Committee, had been approved by the Mechanical Engineering Divisional Council.

This Indian Standard (Part 8) first published in 1974 and subsequently revised in 1994. It covers the recommended practice to be adopted in the safe use of conveyors and conveying machinery used for transportation of bulk materials or unit loads.

There are two main variations of flight conveyors (scraper conveyors):

- a) Conveyors with raised flights where the flight bar's level is above the material level. These conveyors work on purely dragging action of the chain to overcome the frictional drag between load and trough during conveyance; and
- b) Conveyors with submerged profile flights. In these type of conveyors, the conveyance of material is 'enmasse' which is due to the fact that the submerged flights, cutting their way through the material in which they are embedded, encounter a resistance that is greater than the frictional resistance of the material in contact with the bottom and the side of the trough.

In both cases screw take ups are used for tensioning the chain. These types of conveyors generally handle free flowing, granular, powdered or sorted material in small lumps. These shall be used with caution for any material that is sticky, abrasive, corrosive, wet or containing large lumps.

This revision has been taken up to keep pace with the latest technological developments. In this revision, the standard has been brought into latest style and format of Indian Standards, and references to Indian Standards, wherever applicable have been updated.

The code of recommended practice for conveyor safety is in eight parts. This standard (Part 8) covers the safety requirements in flight conveyors (scraper conveyor). Other parts in this series under the general title are as follows:

- Part 1 General information
- Part 2 General safety requirements
- Part 3 Belt conveyors and feeders
- Part 4 Vibrating conveyor/feeder
- Part 5 Apron conveyors/apron feeders
- Part 6 Selection, training and supervision of operators
- Part 7 Inspection and maintenance

The composition of the committee responsible for the formulation of this standard is listed in Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Indian Standard***CODE OF RECOMMENDED PRACTICE FOR CONVEYOR
SAFETY****PART 8 FLIGHT CONVEYOR (SCRAPER CONVEYOR)***(Second Revision)***1 SCOPE**

This standard (Part 8) covers specific safety requirements for flight conveyors (scraper conveyor). These requirements are in addition to the general information and general safety requirements given in IS 7155 (Part 1) and IS 7155 (Part 2) respectively.

2 REFERENCES

The standards listed below, contain provisions which, through their reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below:

<i>IS No.</i>	<i>Title</i>
IS 7155	Code of recommended practice for conveyor safety:
(Part 1) : 1986	General information (<i>first revision</i>)
(Part 2) : 1986	General safety requirements (<i>first revision</i>)

3 SPECIFIC SAFETY REQUIREMENTS

3.1 Besides statutory and other requirements relating to safety in general, specific safety requirements shall be observed at the following stages:

- a) During the construction stage (design, and manufacture);

- b) During the installation stage (design, commissioning and entry into service); and
- c) During the utilization stage (operation and maintenance).

3.2 During the Construction Stage (Design and Manufacture)

3.2.1 At the design and construction stage, among other parameters, capacity, speed of the flight, the pull on the chains and the power requirements for propulsion shall be given due consideration. These parameters shall be carefully selected and worked out.

3.2.2 The selection of chain, design and fabrication of casing, sprocket and the other functional components shall be done suitably keeping in view the respective duty factors.

3.3 During the Installation Stage (Design, Commissioning and Entry into Service)

3.3.1 As the chain (namely the pulling members) shall constantly be rubbing on the casing, renewable liners shall be provided for replacement in case of excessive wear.

3.4 During Utilization Stage (Operation and Maintenance)

The material fed into the conveying system shall be regulated as per the predetermined quantities.

ANNEX A
(Foreword)

COMMITTEE COMPOSITION

Continuous Bulk Conveying, Elevating, Hoisting Aerial Ropeways and Related Equipment Sectional
Committee, MED 06

<i>Organization</i>	<i>Representative(s)</i>
Rites Limited, Gurugram	SHRI D. MAJUMDAR (<i>Chairperson</i>)
CSIR — Central Institute for Mining and Fuel Research, Dhanbad	SHRI DEBASHISH BASAK SHRI GIRENDRA M. PRASAD (<i>Alternate</i>)
Conveyor and Ropeway Services Private Limited, Kolkata	SHRI S. SHEKHAR CHKRAVARTY SHRI KAMAL KUMAR BOSE (<i>Alternate</i>)
Damodar Ropeways & Infra Limited, Kolkata	SHRI D. L. DAS
Directorate General Factory Advice Service and Labour Institutes, Mumbai	SHRI G. P. NIJALINGAPPA SHRI H. M. BHANDARI (<i>Alternate</i>)
Directorate General of Mines Safety, Dhanbad	SHRI D. B. NAYAK SHRI VIJAY YADAORAO BARAPATRE (<i>Alternate</i>)
Durgapur Steel Plant, Sail Durgapur	SHRI SANJAY KUMAR SHRI DEEPAK BISWAL (<i>Alternate</i>)
Indian Association of Amusement Parks and Industries, Mumbai	SHRI PRADEEP SHARMA SHRI ANIL PADWAL (<i>Alternate</i>)
Lepton Projects Private Limited, Ghaziabad	SHRI SANJAY KUMAR SHRI PIYUSH RATHI (<i>Alternate</i>)
Mecon Limited, Ranchi	SHRI SANJOY BHATTACHAR SHRI AMIT PAL (<i>Alternate</i>)
Ministry of Ports, Shipping and Waterways, New Delhi	SHRI ANIL PRUTHI SHRI RAMJI SINGH (<i>Alternate</i>)
Ntpc Limited, New Delhi	SHRI O. P. KALIA
National Mineral Development Corporation, Hyderabad	SHRI ALOK KUMAR MEHTA SHRI S. SURENDER (<i>Alternate</i>)
Phoenix Conveyor Belt India Private Limited, Kolkata	SHRI RAJEEV SHARMA SHRI ASOKE KUM GHOSH (<i>Alternate</i>)
Project and Development India Limited, Noida	SHRI NARENDRA SINGH
Rites Limited, Gurugram	SHRI DINESH KUMAR
Ropeway and Resorts Private Limited, Kolkata	SHRI BIPLAB DAS SHRI SUDIPTA KRISHANA (<i>Alternate</i>)
Tata Consulting Engineers Limited, Navi Mumbai	SHRI SHIREESH S. SWAMI (<i>Alternate</i>)
Usha Breco Limited, Ghaziabad	SHRI MANOJ PANWAR SHRI SANJEEV DHARIWAL (<i>Alternate</i>)
Usha Martin Limited, Ranchi	SHRI SUBRATA DUTTA SHRI SANDEEP JAISWAL (<i>Alternate</i>)
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SHRI AMAN DHANAWAT
SCIENTIST 'B'/ASSISTANT DIRECTOR
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Amendments Issued Since Publication

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